

# Gender Matters: Female Perspectives in ICT4D Research

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**Abstract**—We present our experience of gender as female ICT4D researchers. We highlight our field experiences and comment on our perceptions of how being a woman and performing our female identity has influenced our own ICT4D research. We discuss how gender tensions are further compounded by the researcher’s own physical and social characteristics, such as race, age, social class, and skin color. We apply the lens of reflexivity and performativity to examine critically and explore analytically our field experiences. We end with practical observations about our collective experience.

**Index Terms**—ICT4D, Female researchers, Field research, International research

## I. INTRODUCTION

GENDER and development constitute a well-accepted and critical orthodoxy in the field of Information and Communication Technologies for Development (ICT4D). Promoting gender equality and women’s empowerment is one United Nations Millennium Development eight Goals [33]. Thus, ICT4D gender discourse has tended to focus on differences between men and women in the roles and opportunities which affect technology usage [19]. A number of ICT4D solutions focus on women’s empowerment or welfare as First Days [6] and microfinance beneficiaries [17], while Human Computer Interaction for Development (HCI4D) has emphasized women as users [8] [10].

As such, ICT4D researchers are involved in understanding potential system users and creating context-relevant technologies. This is often initiated by immersing themselves in their user communities and using interdisciplinary methods to map out their needs. Sociology, anthropology and development literature indicates that the perception of the researcher in the field is critical to research outcomes [19] [28]. While ICT4D research has duly focused on women as users and beneficiaries; there has been little discussion on how women as researchers may influence research outcomes.

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Acknowledging that a researcher’s gender may interact with social and cultural factors such as economic differences, ethnicity, social class and religious beliefs in the field is a first step in understanding the ways in which research goals, processes, and outputs are impacted by the researcher’s self. As female researchers, the authors were interested in discussing the shaping of relations in field studies by virtue of *researchers being female*. By reflecting on a range of female researchers’ experiences, we point out ways in which gender has influenced research outcomes. Staying alert to the impact that gender may have is important in preventing design mistranslations or ineffective research design. We draw from our experiences, as researchers of different cultural and social backgrounds who have conducted research in a variety of contexts using methods ranging from ethnography to experimental investigation. We comment on our perceptions of how being a woman has influenced our own ICT4D research, describing the link between *doing* ‘female’ and how we perform our work as researchers into ICT4D. We conclude with some observations on our collective experiences, which we hope other researchers will find useful in their own interactions with sample populations in ICT4D.

Note that we do not aim to uncover gender biases, or compare the influences of female versus male researchers, or attempt a feminist critique of researcher practice. Instead, we aim to present the experience of a number of female researchers at the heart of an evolving field dynamic between participants and researchers.

## II. REFLECTIVE POSITIONS

During our discussions as women researchers allied with ICT4D, we became aware of various perspectives which shaped how we considered the impact of gender on research. We briefly outline these here:

### A) *Feminism*

This is not a feminist paper *per se*, but we could not articulate our experiences in the form that we do were it not for a long history of feminist thought (to which we cannot do justice in a single paper). We acknowledge a tradition of feminist research and, perhaps, also give an insight into why we are drawn to the types of methodology that inform our work. Trauth *et al.* [9] propose four criteria for doing gender research in information systems: engage in researcher reflexivity through critical and interpretive introspection; challenge the hegemonic dominance of the positivist method; theorize from the margins of society and discourse; and problematize gender. While we do not undertake gender research in this paper, except in the broadest possible sense, yet we can recognise the aptness of these criteria, both to what

we do here and to what we do in the field. As such we might claim a sensibility that prioritizes the constellation of qualities which Bardzell defines as characterizing feminist interaction in her discussion of a feminist HCI: pluralism, participation, advocacy, ecology, embodiment, and self-disclosure [29].

#### B) Reflexivity & performativity

Our physical and social characteristics as researchers always effect the social settings we study or intervene in. For instance, gender is an important factor in socio-cultural contexts where gender segregation and patriarchy are commonly practiced. In extending our reflexivity, we divide field experiences according to relations between researcher characteristics and context, such as membership in the community, ethnicity, citizenship, and race.

Undertaking high quality field work requires recognizing, analysing and evaluating our own actions, as people, in the setting in which we participate, observe and intervene. Reflexivity is the tendency for people to reflect on, examine critically, and explore analytically the nature of the research process [18]. It is a key analytical device and a methodological ‘style’ to ‘confess’ our beliefs, values and objectives, including preconceptions of groups with whom we work and our lived and felt experience in relation to events that arise. Reflexivity is an un-finalised process. The values we embed in our interpretations of ourselves in relation to others, artefacts and settings evolve during research; they also evolve as our life unfolds. . In being reflexive about the actions we undertake as female ICTD researchers and in relation with communities we must account for the ways that social relations shape how we *perform* our identity. Our identity performance is often unconscious, involuntary and inculcated from infancy in our every social interaction. We notice who we are by the responses of others and we negotiate meaningful relationships, however brief, through our identity. However, importantly, identity and social relations are continually co-constructed. Chavan and Amera [3] point out that researcher’s efforts to “merge into the researched contexts” often fail during abbreviated visits and suggest that “non-immersion” and “foreign-ness” can benefit research. We do not disagree if ‘blending’ aims to increase participation, since communities find their own ways to leverage the power that our difference may afford. However, we note that there are many other reasons to present ourselves with a sensitivity to local norms regarding women. For instance, we do so for our own security and the subsequent overhead of our vulnerability, as outsiders, carried by host communities. Covering our bodies or not walking alone in ‘unsafe’ areas reduces a community’s concern about our security without negating our visibility.

Here, we present a multi-vocal perspective of how we *perform* our identities as female researchers in the development space. Butler’s argument concerns the production of gender through the cultural act of discourse. Thus, we are careful to avoid an unhelpful production of gender in this paper, such as inherent advantages or disadvantages of being a female researcher [13].

#### C) Gender in ICT4D and HCI4D

The statement “gender and HCI4D” holds in itself two

meanings: gender of the user and that of the researcher. In this paper, we limit our focus to women as designers or design-researchers. Prior work on women as designers and developers of interactive systems includes claims that women employ different strategies in developing problems and constructing solutions [10], [27]. Further, work shows that since design practices and tools do affect the final outcome of the systems there is a need for women to be more involved in development and design processes [8]. Gender considerations become multi-dimensional by accounting for the foundational role that culture plays in researching and designing interventions in development contexts where Western notions of *being female* are not acknowledged. Researchers have to deal with issues that are out of scope to their own belief and background. They have to negotiate for access; be vulnerable and strike a balance to what they might understand as being personal or public information so as to gain the trust of the communities.

### III. THE STRUCTURE OF THIS PAPER

This paper is structured around the experiences of seven female researchers who belong to different races, ethnicity, and citizenry. Each of them adopted a combination of three field techniques of immersion and data elicitation: situated data gathering, participatory design, and controlled experiments. We transformed our original first-person reflections into third person narratives, for easier reading, and arranged them according to the three field techniques. Thus, we locate and identify the field technique, the field context and the research narrative with a specific researcher and her research encounter. In the discussion section, we analyze the common themes that emerge from these narratives.

We draw upon various methods and different paradigms to collect data. Thus, each section includes a short description of our processes, how we engaged with the people we worked with and some of the aspects of what we learnt: about our chosen community; about how to work with them; and, about ourselves. Then we present a description of what it means to be successful as female ICT4D researchers. Next we summarize three major themes that emerge from our work: reconfigurations of the field; methodological improvisations; and management of self of the female ICT4D researcher. We conclude with future directions.

### IV. COLLABORATION & RESEARCHER PROFILES

We discuss our own research; that is all of the experiences we recount are self-reports of the authors. Though, as our brief profiles show, we differ in age, race and research experience, the process of accumulating our perspectives for this paper provides some insight into some shared values, and explains why we have chosen a (first-name) alphabetical author order.

Our work here is highly collaborative. Our discussions started when some of us (Ida, Shikoh, Nithya, Divya, and Julie) participated in the "Women on Women: Gateways to Socio-economic Development", panel at the Grace Hopper Conference, Tuscon, Arizona, 2009. In subsequent months Nic joined the discussion and we extended the discussion into our networks, often by email (e.g. Nimmi, Ann, and Jahmeilah).

For six months we contributed to online discussions, often from field sites. Early in 2010 we collated the discussion, suggested themes and an initial presentation structure. Then, we all contributed writing sections, mentored by the more experienced researchers (e.g. Ann) and submitted. We discussed reviewers' comments across the group and finally amended the paper according.

Before we describe our research experience in ICT4D and reflections on our perceptions of the influence of our gender in field-work we briefly summarize our respective socio-cultural backgrounds and research profiles

- Nic is a 45-year old white, English-speaking Australian design-researcher who was raised in Africa and elsewhere. For the past 7 years she used ethnographic strategies, for the purposes of design, in rural contexts: in European and Aboriginal communities in Australia and villages in rural South Africa, Namibia, and Mozambique.
- Shikoh is a 26-year old black, Swahili- and English-speaking Kenyan living in South Africa. She spent 4 months studying mobile phone usage among Xhosa women in Cape Town, South Africa.
- Ilda is a 28-year old white, English-speaking South-African researcher of Portuguese descent. She spent three months in Bangalore, India, conducting an experimental study with female domestic workers.
- Ann is late-40's white, English-speaking British researcher of European refugee parentage whose project in Kannada-speaking Coorg, India spanned three years. She continues to work with an urban English-speaking community in Kampala, Uganda.
- Nimmi is a 49-year old bilingual (Hindi and Tamil) Indian who has spent the past twenty years living in Mumbai, India. She has conducted ethnographic research among small businesses in Mumbai for two years.
- Jahmeilah is a 27-year old black, English-speaking American, who studied a predominantly Black homeless community in Skid row, Los Angeles. She spent a year using ethnographic strategies to study technology usage.
- Nithya is a 25-year old Tamil-speaking Indian with an Indian upbringing. She studied female domestic workers in Bangalore, India. She was a graduate student in the USA at the time of the research.

## V. EXPERIENCES FROM THE FIELD

In this section, we articulate some of our experiences of gender in our work in ICT4D. We intend our narratives to highlight our responses to field specificities, be they in study, design, evaluation, or implementation. We use story examples but emphasize that these are not mere isolated anecdotes since they emerge from our ongoing action and reflection. Our stories are also a literary device concurring with a view that we produce our identity by constantly re-narrating our own open-ended life-story in dialogue with others. By drawing together diverse elements of our lives (about why, how, who, where, and when); and syntactically ordering events, agents and objects we create a causal continuity. We present our experiences grouped by method. Broadly our methods sit in two paradigms in ICT design: User-Centered Design (UCD)

and the 'situated-paradigm' [32].

Our Controlled Experiments, (*C*, below), exist in the UCD paradigm. UCD encompasses an extensive set of methods to focus design, usability and evaluation on the user's side of the task. Its methods and evaluations offer scientifically validated benchmarks and results to measure the efficacy of ICT4D projects. As typical for ICT4D our UCD methods are adapted to specific countries and account for cultural differences.

In contrast to Controlled Experiments, our participatory and ethnographic methods sit in the situated-paradigm that include participatory, value-sensitive or user experience design, ethnomethodology, embodied interaction and interaction analysis [33]. The paradigm does not target technological solutions or assume that design practices or conventions readily transfer across continents, cultures and socio-economic strata. Rather the paradigm aims to respond to difficulties in generalizing across settings. Thus, the strategies we use to gather data aim to respond to local contexts. We group our experiences under: Situated Data Gathering and Participatory Design (PD). These methods often overlap, however, PD has some particular established tenants that distinguish it.

### A. Situated Data Gathering

We describe various methods by which we gathered data while being immersed in community for at least four weeks of almost continuous access. Our level of access and depth of immersion in a community were determined by various issues both from the community and the researchers' point of view. Our different field-work methods encompass strategies to gain insights on the details of what people, including ourselves, do in a setting, which are loosely described as ethnography. These immersive strategies include 'hanging out with' and 'talking to' users in context. However, we distinguish between our use of ethnographic strategies, methodologically [1]. Here we refer to ethnography only if it involves prolonged immersion in a setting, of periods exceeding two months, and on-going interpretative analysis. Our ethnography includes gathering data by participant observation, dialogue and detailed and iterative analyses of what people do and how they organize action and interaction in their daily lives.

#### 1. Woman as Mother or Honorary Male (Nic & Ann)

*Location:* Eastern Cape, South Africa

*Goal:* Situating Technology Appropriately

*Approach:* Ethnography & Situated Technology Experiments

*Duration of work:* 3 months *in situ* with subsequent fortnights *in situ* over 18 months

Nic's ethnography in South Africa's Eastern Cape province, which led to a digital story-telling application, involved 18 months of forming relationships and discovering design opportunities in the details of daily life [21] - [25]. Nic began by establishing relationships, via emails and a short visit, with a volunteer in Transcape, a Non-profit Organisation (NPO) and the son of Ndungunyeni's senior Headman. This enabled her to live with a family in the village of Lwandile for a consecutive three months and focus on interfaces between traditional leaders, the community, local and remote agencies

on development projects. She first passively observed visitors to the umzi (the Headmans dwelling) as well as impromptu contextual interviews with his family. Daily interactions developed swiftly with the elder sons and with women when she shared domestic duties with them. Such interactions increased familiarity and led to conversations about local issues. This revealed an insight into the Headman's senior son's development priorities for the village and his goal to pursuing the Khonjwayo Chieftenship. Over time, she talked with the Headman's son-in-law, a Chief in another area, local people in a tourist area an hour away and in Transcape's premises where villagers mix with Afrikaans and foreign volunteers. She observed village meetings, and participated in meetings to found a new NPO and in a tribal meeting where she was formally introduced to the Queen. She accompanied the Headman's son to Transcape, the Municipal Archives and the Palace. She facilitated and observed an oral presentation workshop by the new NPO and The National Archives & Records Services. She observed media use locally and computer use at an Internet café in Mthatha and in Transcape's Education Centre. This led to discussions about villagers' media preferences and use in generating income and gathering data on phone handset models from a *spaza* (local shop), based airtime sales. She introduced the Headman's senior son, his sister and local children to the Internet and how to search for information, e-mail, view NGO web-sites and Facebook. Later the Wi-Fi network was extended and used to set up email accounts and a group on Facebook, which yielded data on interactions around photos and text remotely. Various digital storytelling activities arose in situ. For example, Nic created a blog to which the Headman's son and daughter uploaded photos and typed short texts. In situ she recorded data in notes, photographs and video and ex-situ integrated logs of email, SMS, phone calls and Facebook interactions. Nic's relationship with villagers has continued for three years; she has her own mud-brick home in a nearby village and considers community members to be neighbours or friends.

Highly educated women, especially those who travel extensively, are more likely to delay or not have children. This contrasts with customs in development contexts of mothering many children from an early. Indeed, we have been encouraged as a child-less woman to redress our deficiency. In Africa, Nic has been asked where she keeps her children, been offered fertility advice, children to adopt and men to marry or impregnate her and, much more rarely, she is applauded for her 'modern-ness'. While usually relaxed with her child-less status, she became more sensitive about this perception of her.

Gender and status plays out differently. Having achieved a certain age or qualification, women researchers can be treated as honorary male in many locales. This certainly happened in Africa for Nic, and provided her access to customarily male meetings. For instance, she was invited to sit under the men's meeting tree whilst interviewing the Headman and to participate in the new NPO's activities. It has also happened for Ann in India. As honored guests at a breakfast arranged in the Coorg hills, Ann, sat a table with the male host while his daughter served food. The host's wife sat in the kitchen,

waiting for the guests to finish before eating her meal. Although Ann recognised her status there as guest the gender roles assignments made her feel uncomfortable. However, tact dictates that, as guests, she kept these thoughts to herself.

## 2. *Accessing a male space (Jahmeilah)*

*Location:* Skid Row, USA

*Goal:* To understand the socio-technical ecology among homeless populations

*Approach:* Ethnographic Strategies

*Duration of work:* 12 months

In American vernacular, "Skid Row" is often a name for a part of a city that is extremely run-down, heavy with drug and alcohol abuse, and home to some of the poorest. This historical view means Skid Row is perceived as a dangerous place, especially for women and children. As a Black woman entering a predominantly adult male community that is seventy-five percent Black, Jahmeilah realized that she may be subject to some sexually directed male attention [11] [12]. Beyond that slight discomfort she thought that the shared culture of being Black would create a common ground that would decrease attention to socioeconomic differences. In reality, Jahmeilah was perceived for both her cultural affiliation as well as her gender. She entered the field without the aid of an NGO, governmental or other umbrella; which might have contributed to inadvertently enticing male and discouraging female participants .

Entree into the community came through male friendships because men were more compelled to interact with Jahmeilah due to physical attraction. To handle the influx of sexual comments she consciously practiced conservative dress (i.e. avoiding shorts, dresses, and skirts). Even when encouraged by their male friends women turned down any offers to talk. One male participant told Jahmeilah that the women were embarrassed to be around her because she was so well kept. They didn't have the same resources and were ashamed, according to him, of how they would look next to her. It is possible such comparisons would not have been made if Jahmeilah was not a woman.

Jahmeilah's approach to studying homelessness by hanging out in the spaces they shared (like parks) was limiting because it only yielded interviews and insights from men. After two months of being virtually ignored by women within the community Jahmeilah joined a Photo Club started by, and for, Skid Row residents. Members of the Photo Club included non-homeless, currently homeless, and recently homeless adults. Membership within the Photo Club provided an appropriate platform for Jahmeilah to address female community members. As a member from March to October 2009, she was seen as a peer though her position as researcher was often misunderstood. She attended weekly meetings, photographic walkabouts and gallery events with The Club collecting seventy-one hours of observations and conducting twenty-five semi-structured one-on-one interviews. Ultimately, Jahmeilah was able to leverage the complementary social component that developed as a result of membership to gain access to the female community.

Jahmeilah explored the way homeless people in the Photo Club organized themselves around technology within the space of community organizations [15]. Participant-observation allowed Jahmeilah to identify the varying motivations of members, the infrastructural challenges of the community, and the ways technology was used to overcome the Club's social disorganization.

### 3. *Gathering Data In Situ (Nic)*

*Location:* Omahake, Namibia

*Goal:* A system for traditional knowledge recording including Traditional Medicine of Herbs

*Approach:* Video Interpretation

*Duration of work:* Seven field trips and a month living with family across a year

The Situated Paradigm draws on a range of methods to deepen gathering field data using video recording and participant interpretation. Nic gathered data in situ from a number of rural contexts, including Namibia, South Africa, Mozambique and Australia using video. In rural Omahake in Namibia, she analysed activities with people of the Herero tribe across a year. As well as field trips for video activities she lived with a female elder for four weeks in her city and rural homes, undertook basic Otjiherero language lessons, and attended a Church which merges Christian and Herero belief. Since, the sensitivity of healing situations limits observation she gained insights during serious health episodes by participating in healing activities. She scrutinized the ways participants recorded and interpreted 30 hours of video using different methods: participants demonstrated and discussed rural knowledge in situ rurally; and, participants undertook interpretive activities, including using other media. She wrote thick descriptions and content-analysed video and transcripts; including multi-modal interactions, language and storytelling. She integrated these and distilled themes to motivate designing a system where local people can record, store and access their own knowledge [23].

Learning cultural-sensitivity permitted Nic to experience local social structures, critical for interaction design, more deeply. For instance, her lived experience brought into sharp focus that the hamlet is for women a hut with dependent children; but, for men an assembly of corrals for cattle. Gendered perspectives on places and movement between places affect our mobility. For instance, by honoring the request of her hosts in rural Eastern Cape to not venture into surrounding forests (where rape and fire-arm incidents are not uncommon), Nic experienced a sense of being 'captive' which sharpened her consciousness of gendered spatial locations, identity and tact. Like local woman Nic dresses in jeans to go to town but wears skirts and head covering in the village; and there are ethical reasons for blending. Nic's video-based data gathering with Muslim women in Mozambique revealed a perceived relation between female tourists' liberal dress codes and instances of rape and abandoned children. Similarly, indigenous Australian groups tactfully suggest that an immodest female researcher's attire may incite male passions and lead to undesirable consequences for local women.

Living *in situ*, a proximity to participants and participating in ordinary activities alerts us to the corporeal framing of interactions and experiences. This is easy to illustrate in rural settings, because most researchers are more accustomed to urban environments [21]. Nic has learnt of ways to tackle monthly physiological cycles at rural sites without flush toilets facilities; but notes both how uncomfortable such issues can be for researchers unused to such settings; and, how these shape participation. For instance, a daily trip to a secluded area to burn, privately, non-organic waste materials involves tact. Such examples reveal the way our physical bodies entwine with perceptions of ourselves and interlink with our societal roles. Consider expectations of Nic to undertake childcare, nursing duties and cook for up to 15 men over the fire when her Herero host was seriously ill. These intimate engagements are bodily experiences. Indeed, Nic felt physically fatigued by rising before sunrise to lay the fire and her hands became blistered and infected from carrying large hot, caste iron pots from the fire and she nearly lost a finger. Such experiences are short-lived but they sculpt a kinesthetic knowing of identity that goes beyond the proverbial ailments of work in developing countries (Nic has enjoyed malaria twice and other parasite fevers). The body learns to know the setting, socially and physically. For instance, activities associated with performing female identity are physically difficult. It took Nic many hours to learn to carry a water bucket on her head and walk up hills in a long skirt in rural Eastern Cape. The bodily engagement of performing a female identity allowed a different kinaesthetic knowing to emerge. For instance, in rural Namibia, as she become routinized in domestic duties, she no longer perceived the fire as a place to eat and relax but, rather like local women, a place of work to ensure that the men were fed when they are ready. As such, her time was structured by the men's completion of tasks. Obviously, posture and gesture affect our relationships in gaining access to the community. Nic's male, Herero collaborator balked when she would absently forget to avoid placing her hand on her hip when talking to him and her female Herero mentor gently chastised her when she raised her voice to call to a man across the kraal rather than walking, sedately over to him.

### 4. *Culturally appropriate behavior, or how I nearly got married to a coffee plantation owner (Ann)*

*Location:* Coorg, Karnataka

*Goal:* Design research for linkages between fair-trade coffee producers and consumers

*Approach:* Ethnographic Strategies

*Duration of work:* 36 months

Ann's work in Karnataka, India, focused on establishing a partnership with producers of shade-grown coffee as part of a study exploring the viability and design of a tool to link small producers in developing countries with consumers in the Global North [4]. Much of the project's activity was to engage producers along representative value chains in exploring their existing production and information gathering processes and to gain insight into the implications of new forms of data

creation and management. In seeking producer groups for collaboration, Ann's team built relations as full partnerships: bringing in producer representatives as informants to an investigation of feasibility and desirability and asking them to consult on ideas, partial prototypes and potential uses. This involved commissioning local academic researchers at the starting point of the chain as local links. Having built a relationship of trust, the research partners together scoped ICT use. This involved an audit of processes using contextual interviews with key production staff.

A team went into the hills of Coorg, where coffee is grown, and watched the stages of production at the plantation, before visiting the curing works that grades most of the region's coffee. Insights gained from observations were key in talking to partners. The project lasted three years, involved several researchers and multiple field visits, each lasting a couple of weeks and differed in quality from ethnography in converging on one aspect of business life (coffee farming) and having a focus on collaborative design.

When Ann is working in the field she attempts to meet some basic self-appointed rules. These include dressing soberly so that she was on the right side of any bad stereotypes of what 'western women' wear, and paying attention to the etiquette around her. However, this is not always an option straight away. On an occasion in southern India when she was leading the team in Coorg, Ann was the first of the visitors to be ceremoniously greeted by their hosts, a collective of farmers growing coffee, all male. In a delightful welcome ritual, they were each given a sandalwood garland by a person of appropriate rank. As leader, Ann received her garland first and, knowing very little about receiving garlands except what she had seen in televised sporting ceremonies, Ann lowered her head so that it could be placed round her neck, which her host duly did. The rest of the team, mostly Indian, mostly women, took the garland in their hands. As the team moved away from the reception, an Indian colleague came up to Ann and said 'It's OK, you are western.' When she asked for clarification, Ann was told that accepting a garland around the neck meant accepting a betrothal of marriage.

Locals watching Ann navigate their familiar cultural specificities would have seen her make many small blunders, which likely escaped her notice. This blunder was of a different order and she was teased about it for days. However, it also set a precedent, allowing the Indian colleague and Ann to discuss appropriate behaviour and allowed the offering of advice without fear of offending Ann. This Indian colleague became a valuable mentor dispensing much advice on dealing with men in India. This was useful on many occasions, and not least because when the team toured the farms to establish potential partners for a case study about production and ICT, it was apparent that some of the farmers (all male) felt most comfortable talking to the team's only man, a Ph.D. student. It would be fair to say that they expected him to be in charge and were addressing him as the leader of the group. He was not going to be doing the fieldwork, but there to inform his work on peer-to-peer networks, so this misunderstanding had to be tackled. Another reason for addressing this aspect of their hosts' behaviour reflects a distinction between cultural

systems. Ann is not personally concerned about relative status; rather she wants to ensure that any team in which she participates is effective. But while in Coorg the team was clearly in a more status-conscious environment, so it would matter who was understood to be in charge. And because the team was possibly going to have a long working relationship with their hosts, several weeks of proximity and three years of collaboration, it was important to start well to ensure the effectiveness Ann desired as the team lead.

##### 5. *Gendered nature of informal business spaces (Nimmi)*

*Location:* Mumbai, India

*Goal:* To study informal business practices among micro-entrepreneurs

*Approach:* Hybrid Ethnographic Strategies

*Duration of work:* 24 months

Nimmi worked with *Rekha*, the sole on-line agent in a Mumbai suburban slum [20]. Rekha brokers on-line ticketing services for a significant migrant community yearning to go back home periodically. She is the only computer literate member in a family consisting of her mother-in-law, a husband who teaches school history and two daughters. She works from home and advertises by circulating banners and pamphlets in the neighborhood. Despite formal training in computers and a government license to broker tickets, Rekha's business is tottering due to lack of visibility, expensive technology maintenance and competition. ICT-driven Businesses are essentially male and extensively use informal business networks to support everyday business processes (soliciting clientele, procuring and maintaining hardware, skilled labor are a few). Rekha's seemingly legitimate training and license were ineffectual in an informal business space (that even her husband is an outsider to). Her situation demonstrates evolving gender relations in a dynamic emerging market of the slum; where women can train and start-up an on-line business but are constrained by a more entrenched and gendered informal space of competitive commerce.

The moderately upper-class female researcher of a traditionally male working class public, found a rare entry into this space by encountering and pursuing a woman occupant. Thereby, she was able to delineate deep social sanctions as they play out to restrain women from public participation. This threw new Ann on research possibilities previously unavailable to the female researcher. In turn, this led her to get under the skin of gendered stopgaps in public spaces and trace connections between the public and private gendered dichotomies. Therefore, by virtue of being a female researcher in a gendered space, she had received certain forms of cultural access that helped her be more reflexive of social categories.

Nimmi deployed *hybrid* ethnographic strategies for eliciting data. These included participant observation, semi-structured interviews, context-surveys and profile-building to study women using ICTs (mobile phones and PCs) in the Mumbai slums. She studied women managing enterprises that require low capital (e.g., small shops or services) with the slum ecology as unique backdrop fostering everyday business

networking activity. Nimmi's approach yielded a 'deep peek' into lives of these women micro-entrepreneurs striving in a male world of business management. The study offers a rare glimpse into the *performativity* of women researchers and subjects as 'liminal agents' (never wholly socialised) in the world dominated by men.

### *B. Participatory Design*

Participatory approaches in design involve user participation in interactive systems design [2]. Participatory design involves establishing relationships, participation in the program, and participation in evaluation.

#### *1. Cultural access by virtue of being a woman researcher (Shikoh)*

*Location:* Cape Town, South Africa

*Goal:* Employ participatory design in creating mobile Internet applications for low-literate users

*Approach:* Participatory design

*Duration of work:* 4 months

As a foreign black student studying in South Africa, Shikoh perceived it fairly hard and unsafe to work with the marginalized community of Khayelisha considering recent xenophobic attacks on African immigrants in South Africa. Khayelitsha and the surrounding community were hot beds of this violence which had led to massive losses of life and displacement. However, black Africans outside of South Africa are perceived to have a certain *look*: mostly dark skinned and lean-framed; iconified by a Kenyan marathon runner. Thus, being fair skinned and 'not so skinny', at first glance Shikoh passed for a local Xhosa woman. However, from the beginning, she admitted she was 'kwere kwere', a local term for foreigners. This did not seem to change participants' initial opinion and they embraced me as their own.

While Shikoh's physical appearance gained her an audience, but greatest barrier was being unable to speak Xhosa as most of the participants were not fluent in English. Shikoh tried to overcome this by using a translator but, after a few sessions, there appeared to be a power-play between participants/interpreter and some obvious misinterpretation. Thus she turned to 'group translation', a technique emerging from the phenomenon of correcting the translator by stringing up English words by different people to depict the meaning participants were trying to convey. This balanced the power and everyone got excited to be involved.

Shikoh's study on the use of mobile internet among first-time users in Cape Town, South Africa used sociology's version participant observation: "deep hanging out" [31]. This method aims to immerse the researcher in participants' lives by getting involved in their daily routines. Shikoh spent between 4-6 hours a day for 13 weeks with the women, training mobile internet use and observing them while they use the media. During the first few weeks of the study, the women probed into Shikoh's life, inquiring about marital status, children, home country and income amongst other things. Honest responses and interactions encourage the women to be equally candid, share their sentiments, confide, and ask for advice. She identified with them, through reporting and

leaving 'work' at the same time, sharing meals, and conversation. Through this interaction Shikoh soon became a friend, a confidant, a life coach, and part-time beautician. She was able to equally probe into their personal lives to learn their acquisition and use of mobile phones while not coming across as snobbish and intrusive, a label often given to researchers by this community

To neutralize concerns about education and residence she started trading skills. Women gave Shikoh tips on keeping a man, raising children, speaking isiXhosa and sewing. In response Shikoh taught them to use the internet, the importance of hygiene and health check-ups. Shikoh did not remunerate the women with money; instead, to thank them for their help in her research and load airtime on their mobile phones (which they appreciated).

In two other studies, different aspects of Shikoh's physical appearance affected her access. In Khayelitsha, while exploring the ways people use the mobile internet [31], she mainly gained access to the male participants because she was female. The men often inquired what 'that woman' is doing, their approach will be followed by mostly sexual advances. Shikoh invited another senior woman to be around her to ward off sexual advances and protect her safety.

#### *2. Casting issues and bounded sites (Nithya)*

*Location:* Bangalore, India

*Goal:* To map out a subset of social networks through low-cost media.

*Approach:* Ethnographic Strategies and participatory design.

*Duration of work:* 4 months.

As a young, unmarried, Tamil-speaking Nithya shared several socio-cultural elements with her participant population, such as language, religion, gender, and ethnicity. However, her foreign-education, employment for a giant IT research lab and upper-caste (Brahmin), set her apart from the community. She resolved some of the differences by sitting on the floor, co-dining, dressing in traditional attire, and speaking the local tongue, certain deeper differences continued to shape social interactions. For example, women participants were acutely concerned that Nithya remained unmarried despite "being old enough to bear children" and one generously offered to set her up with a young man from the community.

Access to the slum communities was channelled through the NGO, championing women's rights (especially domestic workers). Upon her introduction to the community, Nithya was immediately cast as a student activist affiliated to the NGO. As she later discovered, some community members assumed her to be the NGO chairperson's daughter! The NGO umbrella provided cultural access limited to the women in the community while attempts to converse with husbands and male teenage children were often anxious, uncommunicative exchanges. On-going interviews with the women would taper off as men returned home from work. Possibly some of this response was due to the social anxiety experienced by men and (young and unmarried) women; however, a closer investigation revealed a misconception about Nithya being a proxy NGO member. They wanted no part in a research

agenda to empower women. Thus Nithya had to re-arrange field schedules with women while the men were away at work.

In the spring of 2009, Nithya spent 4 months conducting ethnographic fieldwork among 22 female domestic workers in two slums in Bangalore [26]. She combined semi-structured interviews, observation, surveys, and budget exercises. These indicated that education and health care were key areas and, simultaneously, that household entertainment technologies, in particular VCD players, are pervasive. She created, and circulated to specific areas in the community, a participatory video framework catering to education and healthcare and highlighting best practices in soap opera and cooking contest formats. Her primary aim was to research and map further information diffusion patterns via the circulation of the video. She instituted a mobile call-in contest to understand the reach of video community diffusion and to test awareness from watching the educational videos. Over the span of a week, via the mobile call-in, she was able to gauge and map community social networks integral to information diffusion.

### C. Controlled Experiments

Controlled experiments that we describe here involve technology training and skill assessment toward developmental impact.

#### 1. Running a controlled experiment (Ilda)

*Location:* Bangalore, India

*Goal:* Assess training effects of video-based storytelling among low-literate users

*Approach:* Controlled experiment

*Duration of work:* 3 months

Ilda set out to study teaching low-literacy populations with video using an empirical scientific approach [14]. The main part of this study was a controlled experiment where different types of videos were used to teach domestic workers marketable skills. For this, Ilda partnered with an NGO focused on employment creation for the informal workforce in urban India. The experiment she designed required that participants first watch a video and then physically perform the task depicted in the video using materials provided. The videos depicted two domestic tasks, vacuuming and bed making. Hence participants were provided with materials such as a bed with linens and pillows and a rug and vacuum cleaner with which to recreate the tasks they were being taught. During the task performance part of the experiment, Ilda visibly evaluated participants and offered controlled amounts and types of assistance where required. The experiment aimed to test the efficacy of different kinds of video content for teaching work-related skills. However, when negotiating her experimental procedure with the partner NGO it became clear that she had to balance her experimental needs with those of her participants. In return for their participation in her study, it was important that the domestic workers also receive some benefit. Hence, Ilda ensured that, after her experimental procedure was complete, each participant was given a full training experience which fell beyond the scope of her study.

When it came to the research participants, Ilda was very aware that she was very different from this group culturally.

As a white, educated South African there certainly seemed little common ground. The, no doubt, unusual experimental setup she created further served to increase the distance between her and the participants. Ilda had a sense of bemusement over the odd and precise experimental setting. For instance, participants were made to watch videos alone rather than in groups and were only allowed to watch each video once. To try and bridge some of the gaps and put participants at ease, Ilda turned to Kannada, the participants' native language. She learned basic phrases for greetings, introductions and providing training feedback (e.g. "Very good!"). In many cases, she played the role of a comically lost in translation foreigner, encouraging participants to correct her in order to foster interaction. Slightly off Kannada pronunciations would amuse participants making the experimental situation more relaxed. When collecting demographic and literacy data, Ilda asked most questions in Kannada eventually reducing the need for a translator to a minimum. In some regards, her outsider status had benefits. Since the study was involved skills training, Ilda got the sense that she was presented as a "knowledgeable outsider" by NGO workers. In reality, Ilda has no training in domestic worker skills yet she was happy to play the role of someone who "knows what they are talking about". Overall, it would seem that Ilda's gender did not influence her study as much as her attempts to lessen the possible alienation of cultural differences and her experimental approach. One might conclude that her teaching about domestic work made sense as this is typically a woman's domain, but this was not necessarily a major influence.

## VI. DISCUSSION

Many themes arose in the stories we gathered for this paper. We have reported on a variety of negotiations, tensions and affordances of external characteristics. While gender was our intended focus, we cannot ignore that other characteristics, including race, age and perceived levels of education and social standing, play roles in relationships between researchers and field subjects. Additionally, we noted definite similarities and differences across our experiences; we will mention the more prominent here. One clear theme arising in our experiences is how researchers negotiate their insider or outsider status. We often attempted to foreground similarities with participants while trying to de-emphasise differences, or at least minimize the effects of any differences. We aimed, in this approach, to leverage any common ground with subjects in order to gain access to and the trust of target communities. Gender, in combination with race and age, often determines whether we will pass as a relative 'insider' or stick out like a sore thumb. Ilda learned Kannada phrases, Nic learnt basic Otji Herero to strike closer connections with participants while Nithya and Nic sat on the floor and refused any offers of beverages in her interactions to close the distance.

Another theme referred to the ways researchers 'perform' gender. In other words, we behave according to our, conscious or unconscious, knowledge of femininity but may adapt that to a culture. Thus, rather than acting as "themselves" entirely,

researchers adopt personas compatible with their view of what they felt femininity meant in their field context. Age and experience influence this. For instance, compatible with patriarchal power structures Nic worked as much with men as women in Lwandile, South Africa; and, in Namibia when participants were around deferred to her less experienced research collaborator. However, since she has worked in fields where men predominate and travelled all of her life she feels her adaptive identity is simply part of her-self.

We would like to claim that our position as researchers working in, or allied to, ICT4D implied some success in building bridges with communities and incorporating understanding from the field into technology design. However is unclear what ICT4D research success means in the field. Thus, here we list some questions concerning female ICT4D researchers which prompted us to compare our experiences:

- 1) How did being women afford or restrain entry to target communities?
- 2) A number of us encountered gender stereotypes. For instance, Nic confronted, in some cases defend, her status as an unmarried, childless woman. Jahmeilah was perceived as a sexual rival in among a group of urban homeless which inhibited access to interviewing women. Acknowledging stereotyped perceptions led us to consider what identities a women researcher is compelled to refer to in the field?
- 3) Does being a women researcher offer a privileged insight into a development agenda, especially if it concerns the home, hearth and children?

Across our collected experiences, we noted definite commonalities and differences. Here are some of the common dilemmas we faced:

- 1) Whether or not to blend in with the community. In particular, how will participant observation, where we partake in culturally-specific activities or learn the local lingo for instance, affect our subjectivities, analytic distance, and access?
- 2) Our gender either promoted or prevented us in gaining entry. Nithya was unable to talk to men in the urban slum and Jahmeilah was unable to access the homeless women. Age also played a role here, for instance, Shikoh used her gender, age, and sexuality to gain access to male subjects while and Nic and Anns' status as older, highly educated women enabled them to be treated as honorary men.
- 3) We often face personal, sometimes awkward, questions on our behaviours and lifestyles, particularly in relation to marriage and childbearing.

We also noted differences in our experiences:

- 1) Age and perceived level of education influence field subjects' perception of researchers. In Nic and Ann's case these worked beneficially by elevating the status in the eyes of the men while for Jahmeilah these worked to exclude her from her group of interest.
- 2) Gender shapes the way some researchers were received, but for others it played a minimal role in comparison to

culture and race. For example, gender influenced how women in the field responded to Jahmeilah and Nithya while Ilda did not feel that her gender played as big a role as the 'otherness' of her race and language did.

- 3) Married women are, in general, perceived as 'safer' associations, as in researcher Nimmi's experience.
- 4) The researcher's 'place' in a group sometimes depended on social dynamics. Ann notes how she was often ignored if she was the only woman in a team. Meanwhile other researchers working on their own did not experience this.
- 5) Following on from point (4), the logics of whether or not to be alone in our field engagements differed across our experiences. Concerns about safety arose in Shikoh's experience with interviewing men. However, Jahmeilah, worked in a context most might deem unsafe but encountered little basis for safety concerns.
- 6) We draw attention to how blending in with communities can influence our subjectivities through our bodies. That is, knowing about self and others in performing gender includes corporeality. In developing cultural conversancy our bodies learn as much as our minds. This is important for physical interactions with technology and in preparing for field work. While, Nic's research in rural settings may most clearly demonstrate this issue; even subtle movements such Nithya sitting on the floor shape our perspectives of settings.

In addition to our reflexivity with respect to our field engagements, we modified our methods, by talking to local mentors in order to seek out local explanations for activities and structures and cultivate a contextualized understandings that do not rely on our own value and knowledge systems.

From our collected field experiences we are able to extract three further overarching lessons:

1) *Reconfiguration in the field*: We showed how we responded to the immediacies of fields and stakeholders. In our engagements, we often needed to re-align our goals, methods and channels based on our field experiences which were shaped, in no small way, by our gender. For example, even though Nithya had wanted to interview men in the urban slum, her cultural access to men was cut-off by virtue of her gender and initial field entry by the NGO. This led her to shift her focus on women in the same environment.

2) *Methodological improvisations*: We made various institutional and methodological innovations while engaging in the field; which may relate to our gender. Our data gathering paradigms inherently promote adjustment to settings; and, we leveraged this flexibility. For example, Shikoh innovated group translation in dealing with non-English speaking focus group participants.. In contrast, Ann spoke to the senior-most person in the group to sustain attention. And, Ilda added a training component to extend the scope of her controlled experiments so that the experimental procedure did not seem entirely pointless to participants.

3) *Management of self*: We often constructed and negotiated our identities as female researchers. We have highlighted instances where social relations shaped how we portray ourselves, or perform our identity. For example, many of our

stories report fulfilling local expectations by cooking, child-care, wearing traditional, sober or conservative attire.

## VII. CONCLUSION

In this paper we have gathered together the field experiences of eight researchers using a variety of methodologies. We began this work with the expectation that we would find strong common themes related to gender amongst our various experiences. However, the reality was that our experiences varied greatly. Furthermore, in some cases gender clearly played influential parts in the relationships with field subjects and other time the role of gender seemed secondary to other socio-cultural markers such as age, race and perceived level of education. Two themes ran through this work, both relating to how the researcher negotiates their identity in the field. First, we balance the perception of the researcher as an insider or outsider to the field community. We found a tendency to highlight characteristics which make us seem more like insiders to our target communities. Second, there is a need to *perform* our identities in ways that serve our research best. We reflected upon and the relationship that is built between researcher and community and analyzed our field engagements reflexively as objects of enquiry themselves reflected upon our ‘given’ positions as female researchers. Through our anecdotes, we demonstrated a variety of relationships and situations that we have either encountered briefly for become deeply embedded in. We have all found it necessary to ‘perform’ our gender in some way conscious of how field communities might perceive and receive us. In this process we have had to negotiate our identities with meanings, beliefs and values within our lived and felt experience.

We hope that our documenting of our own experiences is only the first step in a larger conversation about the relation between the researcher and the field in ICT4D.

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